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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SECURITY INFORMATION

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COUNTRY East Germany

REPORT

SUBJECT New Process for Producing Nickel

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1. Since March 1953, VEB Halbzeugwerk, Auerhammer, has been producing nickel, obtained by a new process developed by Professor A. Lange of the Metallhuetteninstitut in Freiberg, Saxony.
2. The purpose of Professor Lange's experiments was to develop a satisfactory method of obtaining nickel from poor nickel-oxide ores such as those found in East Germany. After testing and rejecting various processes used in other countries, Lange finally developed a new process based on the old and tried method of sulfidization smelting. Under the system developed by Lange, oxidic nickel ore, to which gypsum and coal have been added, can be smelted in a reverberatory furnace, without the necessity for costly briquetting, to produce a nickel matte and a separable (marketable) slag.
3. Experiments showed that the low-temperature carbonization process does not require intimate contact between the charge components or a strongly reducing furnace atmosphere. Large scale experiments then confirmed the conclusion reached in the laboratory that the reduction of the gypsum to calcium sulfide and the reaction produced by the nickel oxide of the ore, also take place in an oxidizing furnace atmosphere.
4. In this process, the addition of limestone, which is usual when a stack furnace is employed, can be dispensed with. An easily fusible slag can be achieved merely by using the necessary sulfurization agents. Even though the required furnace temperature is somewhat higher than is customary for reverberatory furnaces used in the smelting of sulfidic copper ore, this is not beyond the capacity of furnaces of this type and a considerable part of the waste-gas heat can be utilized.
5. As a result of these experiments, oxidizing nickel ores found in East Germany can now be worked up into a metal by a simple process using fuels locally available.

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